

What is claimed is:

**CLAIMS**

1. A method of reducing the peak-to-average power ratio (PAPR) of a modulated baseband signal, wherein the baseband signal is constituted by a waveform function modulated by information-carrying symbols transmitted in parallel.  
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2. The method of claim 1, including carrying out peak detection to detect peaks in the modulated baseband signal that exceed a threshold ( $C$ ), and generating a pulse sequence signal ( $p[m]$ ) therefrom.  
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3. The method of claim 2, including oversampling of the modulated baseband signal prior to the peak detection.
4. The method of claim 2, including application of a pulse sequence shaping to filter the pulse sequence signal in order to generate a peak-cancellation signal ( $c[m]$ ).  
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5. The method of claim 3, including application of a pulse sequence shaping to filter the pulse sequence signal in order to generate a peak-cancellation signal ( $c[m]$ ).
- 20 6. The method of claim 4, wherein the pulse sequence shaping is designed such that its pass-band is limited to the frequency-domain gap between the edge of the information-carrying frequency bandwidth of the modulated baseband signal and the edge of the channel's frequency band defined by the spectral mask specifying the maximum tolerable out-of-band emission.
- 25 7. The method of claim 5, wherein the pulse sequence shaping is designed such that its pass-band is limited to the frequency-domain gap between the edge of the information-carrying frequency bandwidth of the modulated baseband signal and the

edge of the channel's frequency band defined by the spectral mask specifying the maximum tolerable out-of-band emission.

8. The method of claim 4, wherein the peak-cancellation signal is subtracted  
5 from the modulated baseband signal to produce a reduced-PAPR modulated baseband signal ( $\hat{s}'[m]$ ).

9. The method of claim 5, wherein the peak-cancellation signal is subtracted  
10 from the modulated baseband signal to produce a reduced-PAPR modulated baseband signal ( $\hat{s}'[m]$ ).

10. A transmitter comprising:

a baseband signal generator for generating a digital baseband signal ( $\hat{s}[n]$ )  
from an input data stream;

15 a digital-to-analogue converter for converting the digital baseband signal into an analogue baseband signal ( $s[t]$ ) prior to output by a transmitter stage [TX];

an oversampling filter arranged between the baseband signal generator and digital-to-analogue converter for oversampling the digital baseband signal and thus generating an oversampled digital baseband signal ( $\hat{s}[m]$ );

20 a signal divider for splitting the oversampled digital baseband signal into first and second parts;

a peak detector arranged to receive the first part of the oversampled digital baseband signal as input and configured to output a pulse sequence signal ( $p[m]$ ) containing a pulse for each peak in the oversampled digital baseband signal that  
25 exceeds a threshold level ( $C$ );

a pulse shaping filter for receiving the pulse sequence signal and converting it into a filtered clipping signal ( $c[m]$ ); and

a signal combiner for subtracting the filtered clipping signal from the second part of the oversampled digital baseband signal so as to produce a digital baseband

signal ( $\hat{s}[m]$ ) with reduced PAPR which is routed to input into the digital-to-analogue converter for transmission by the transmitter (TX).

11. The transmitter of claim 10, wherein the pulses of the pulse sequence signal  
5 have a magnitude corresponding to the amount by which the peak concerned exceeds the threshold level (C).
12. The transmitter of claim 10, wherein the pulse shaping filter is a FIR filter.
- 10 13. The transmitter of claim 11, wherein the pulse shaping filter is a FIR filter.